

IN THE CLAIMS

This listing of claims will replace all prior versions of listings of claims in the application:

Listing of Claims

1. (currently amended) A method comprising:

(a) ~~—locating a series of points along a first boundary of a feature of or relating to a heart~~an imaged anatomy, the series of points defined by a physical location of with a probe which is inside a body;

identifying a size and a shape of the first boundary defined by the series of points physically located with the probe;

comparing the size and the shape of the first boundary defined by the series of points with a second boundary defined by an acquired image data of the imaged anatomy;

calculating if there is a match between the first boundary and the second boundary; and

if there is a match, creating and registering a graphic representation of the location of the probe at each of the series of points for display with the acquired image data of the imaged anatomy; and

(b) ~~—registering a representation of the probe with an image of the heart using the feature.~~

2. cancelled.

3. cancelled.

4. cancelled.

5. (currently amended) The method of claim 1, wherein the acquired image data is acquired using computed tomography, magnetic resonance, or ultrasound.

6. cancelled.

7. (currently amended) A method comprising:

locating a series of points along a first boundary of a feature of the imaged anatomy, the series of points defined by a location of a probe which is inside a body;

identifying a size and a shape of the first boundary defined by the series of points located with the probe;

comparing the size and the shape of the first boundary defined by the series of points with a second boundary defined by an acquired image data of the feature of the imaged anatomy;

calculating if there is a match between the first boundary and the second boundary; and

if there is a match, creating and registering a display of an electrical property data acquired by the probe at one or more of the series of points for simultaneous illustration with the acquired image data of the imaged anatomy.

acquiring at least one three-dimensional image of an organ or structure inside a body;

registering a representation of a probe which is inside the body with the image using at least one feature of the organ or structure.

8. cancelled.

9. cancelled.

10. (currently amended) The method of claim 7, wherein the acquired image data is acquired ~~comprises one or more images acquired using computed tomography, magnetic resonance, and/or ultrasound.~~

11. cancelled.

12. (currently amended) A system comprising:

a probe configured to travel inside a body to locate a feature of an imaged anatomy;

~~a processor configured to be communicatively coupled to a the probe and a memory, the probe being configured to locate a feature pertaining to an organ or structure inside a body;~~

the processor operable to execute a plurality of program instructions stored in the memory, the plurality of program instructions representative of the steps including:

locating a series of points along a first boundary of the feature of the imaged anatomy, each of the series of points defined by a different physical location of the probe inside a body,

identifying a size and a shape of the first boundary defined by the series of points identified in the locating step,

comparing the size and the shape of the first boundary defined by the series of points with a second boundary defined by an acquired image data of the feature of imaged anatomy,

calculating if there is a match between the first boundary and the second boundary, and

in response calculating a match between the first and second boundaries, creating and registering a graphic representation of the location of the probe at each of the series of points for simultaneous illustration with the acquired image data of the

feature of the imaged anatomy ~~a memory configured to store an image pertaining to the organ or structure inside the body, the image including the feature; and~~
 a display configured to simultaneously display the image and a representation of the probe, the image being registered with the representation of the probe using the feature.

13. (currently amended) The system of claim 12, wherein the ~~organ or structure~~ imaged anatomy ~~comprises~~ includes a heart, and wherein creating the display is configured to ~~includes creating a~~ simultaneously display of a map of electrical properties of the heart acquired at one or more of the series of points with the probe in conjunction with the acquired image data of the heart and the graphic representation of the probe at one or more of the series of points located with the probe.

14. cancelled.

15. cancelled.

16. (currently amended) The system of claim 12, wherein the acquired image data ~~comprises one or more images~~ is acquired using computed tomography, magnetic resonance, or ultrasound.

17-24. cancelled.

25. (New) The method of claim 1, further comprising the steps of:

comparing a size and a shape of a boundary of a second feature defined by an additional series of points located with the probe relative to the size and shape of the second feature defined by an acquired image data of the second feature;

comparing a spatial relation of the second feature relative to the first feature both defined by the points physically located with probe relative to a spatial relation of the second feature relative to the first feature defined by the acquired image data of the first and second features; and

calculating if there is a match of the first and second features and spatial relation therebetween as defined by the series of points located with the probe relative to the first and second features and spatial relation therebetween as defined by the imaged data,

wherein the step of creating and registering the graphic representation of the probe located at one or more of the series of points for display relative to the acquired image data is performed if there is the match calculated according to the above step.

26. (New) The method of claim 1, further comprising the steps of:

acquiring a first heart vector data registered to at least one of the locations of the series of points of the probe;

acquiring a second heart vector data registered to a location of the acquired image data illustrative of the first feature of the imaged anatomy; and

registering the location of the first heart vector data relative to the second heart vector data so as to thereby register the representation of the probe at one or more of the series of points relative to the acquired image data of the first feature of the imaged anatomy.

27. (New) The method of claim 1, wherein the imaged anatomy includes a heart, and wherein creating the display includes creating a simultaneously display of a map of electrical properties of the heart acquired at one or more of the series of points with the probe in conjunction with the acquired image data of the heart and the graphic representation of the probe at one or more of the series of points located with the probe.

28. (New) The method of claim 7, further comprising the steps of:

comparing a size and a shape of a boundary of a second feature defined by an additional series of points located with the probe relative to the size and shape of the second feature defined by an acquired image data of the second feature;

comparing a spatial relation of the second feature relative to the first feature both defined by the points located with probe relative to a spatial relation of the second feature relative to the first feature defined by the image data of the first and second features; and

calculating if there is a match of the first and second features and spatial relation therebetween as defined by the series of points physically located with the probe relative to the first and second features and spatial relation therebetween as defined by the acquired imaged data,

wherein the step of creating and registering a display of an electrical property data acquired by the probe at one or more of the series of points for simultaneous illustration with the acquired image data of the feature of the imaged anatomy is performed if there is the match calculated according to the above step.

29. (New) The method of claim 7, further comprising the steps of:

acquiring a first heart vector data having a location registered relative to at least one of the locations of the series of points of the probe;

acquiring a second heart vector data having a location registered relative to a location of the image data illustrative of the first feature of the imaged anatomy; and

registering the location of the first heart vector data relative to the location of the second heart vector data so as to thereby register the representation of the location of the probe at one or more of the series of points relative to the location of the image data of the first feature of the imaged anatomy.

30. (New) The system of claim 12, wherein the series of program instructions are further representative of the steps including:

comparing a size and a shape of a boundary of a second feature defined by an additional series of points located with the probe relative to the size and shape of the second feature defined by an acquired image data of the second feature;

comparing a spatial relation of the second feature relative to the first feature both defined by the points physically located with probe relative to a spatial relation of the second feature relative to the first feature defined by the acquired image data of the first and second features; and

calculating if there is a match of the first and second features and spatial relation therebetween as defined by the series of points located with the probe relative to the first and second features and spatial relation therebetween as defined by the imaged data,

wherein the step of creating and registering the graphic representation of the probe located at one or more of the series of points for display relative to the acquired image data is performed if there is the match calculated according to the above step.

31. (New) The system of claim 12, wherein the series of program instructions are further representative of the steps including:

acquiring a first heart vector data registered to at least one of the locations of the series of points located with the probe;

acquiring a second heart vector data registered to a location of the acquired image data illustrative of the first feature of the imaged anatomy; and

registering the location of the first heart vector data relative to the second heart vector data so as to thereby register the representation of the probe at one or more of the series of points relative to the acquired image data of the first feature of the imaged anatomy.